

Claims as enclosed to IPER

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5 **We claim:**

1. A process for the catalytic oxidation of hydrogen chloride to chlorine by means of oxygen over a catalyst comprising on a support

- 10 a) from 0.001 to 30% by weight of gold,
b) from 0 to 3% by weight of one or more alkaline earth metals,
c) from 0 to 3% by weight of one or more alkali metals,
d) from 0 to 10% by weight of one or more rare earth metals,
15 e) from 0 to 10% by weight of one or more further metals selected from the group consisting of ruthenium, palladium, platinum, osmium, iridium, silver, copper and rhenium,

in each case based on the total weight of the catalyst, wherein the carrier is selected from the group consisting of titanium dioxide, zirconium dioxide, aluminum oxide and mixtures thereof, and wherein gold is applied to the support as an aqueous solution of a gold compound.

- 20 2. The process as claimed in claim 1, wherein gold is applied to the support as an aqueous solution of AuCl_3 or HAuCl_4 .

- 25 3. The process as claimed in claim 1 or 2, wherein the metals other than gold are applied to the support as aqueous solutions of their chlorides, oxychlorides and oxides.

- 30 4. The process as claimed in any of claims 1 to 3, wherein the reaction temperature is $\leq 300^\circ\text{C}$.